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7. BRACHIOPODA

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II.—SUBJECT INDEX

Reference to the "Titles" is by the name(s) of the Author(s).

Text-books. — Invertebrate Paleont., Easton ; General, Ehrenberg ; Termier, H. & G., Müller.

General.—Report on Petroleum exploration in Britain, Falcon & Kent ; Russian Treatise on Invertebrate Paleontology, Sarycheva et al., Fossil brachs, in handbook, Roger. Population studies of *Orania* Rowell.

Catalogues.—Type specimens of Geol. Survey, Canada, Bolton, Type and little known species of Morocco, Colo & Petiot.

Classification.—Proposed classification for Pentameracea Rzhonsnitskaya (2) ; Productoidea, Muir-Wood & Cooper ; Proposed new orders Termier.

Biography.—Life of W. H. Dall, Woodring.

Biometrical analysis.—Relative growth characteristics of Lr. Carb. species Parkinson ; Silurian U.S.A. Amsden ; Carboniferous Germany Gräf.

Nomenclature.—Type species of *Norella* Bittner, 1909, Ager ; correction of brachiopod names, Cooper ; type species of *Stropholasia*, Muir-Wood.

Shell structure.—Productoidea, Muir-Wood & Cooper.

Techniques.—Preparation by dissection and acid development, Muir-Wood & Cooper.

Terminology.—New terms for Productoidea etc. Muir-Wood & Cooper.

STRUCTURE AND ANATOMY

Anatomy and Physiology.—Histology and histological sections through gut of *Crania anomala*. Histochimistry of gut of *Crania* Chuang ; Anatomy of *T. caput-serpentis*, Haro ; metamorphosis and developmental stages of lava of *F. sanguinolenta*, Mano ; oxygen equilibrium of respiratory pigment, hemerythrin, Manwell ; mechanism of ciliary food-collecting and gut functions of Recent brachiopods, Morton ; life history and larval development of *Tequulorhynchia*, Percival ; development and anatomy of *Crania*, Rowell ; feeding mechanism of spine-bearing fossil forms, Rudwick ; functional use and mode of growth of spines in spiriferidines Vandercammen ; ring attachment in young Productoidea Muir-Wood & Cooper ; possible feeding habits in productids, Muir-Wood & Cooper.

Serial Sections.—Silurian, U.S.S.R., Alekseeva (2), Nikiforova ; Sapelnikov ; Canada Crickmay ; Harker in Harker & Thorsteinsson ; Britain Owen.

DISTRIBUTION

Cambrian.—W. Africa (Lr.), Poulsen ; S. Korea (Ur.) Kobayashi and (1) ; Wyoming, U.S.A. (Ur.) Lochman & Hu ; Argentina (Mid.) Poulsen (1).

Ordovician.—U.S.S.R. (Lr.), Andreeva ; Czechoslovakia (Ur.) Havliček ; Britain (Caradoc Series) Dean ; Dean (1), Ireland, Wright ; French Sahara (Lr.) Legrand, Poueyto & Rouaix ; South Korea, Kobayashi ; Canada, Colquhoun ; U.S.A. (Mid.) Pestana.

Silurian.—U.S.S.R., Alekseeva (1) ; Alekseeva (2) ; (Lr.), Asatkin ; Nikiforova ; (Wenlock) Sapelnikov ; Czechoslovakia, Havliček ; Britain, Lawson ; Canada, (Ur.) Boucot (2) ; (Mid.) Norford ; U.S.A. Amsden, Amsden (1) ; Amsden & Huffman ; W. Texas, Wilson & Majewski ; Australia, Philip.

Devonian.—U.S.S.R., Bublichenko, Hecker ; (Lr.) Khodalevich (1) ; Miroshnikov, Kravtsov, & Shcheglova ; (Mid.) Tjazaheva ; Khodalevich *et al.* (Urals) ; Yana ; (Ur.) Poyarkov ; (Mid.) Rozman ; (Mid.)

Rzhonsnitskaya & (1), (Ur.) Sidiachenko. Czechoslovakia (Mid.) Havliček (1) ; Germany (Mid.) Schmidt ; Belgium (Lr.) Boucot ; Spain (Ur.) Sitter & Zwart ; Canada (Mid.) Crickmay (1) ; (Lr.) Boucot (1) & (3) ; (Ur.) Pedder ; U.S.A. Sutton ; (Lr.) Boucot & Arndt ; (Lr. Mid. & Ur.) Muir-Wood & Cooper ; South America Bürgl ; Australia (Lr.) Philip.

Carboniferous.—U.S.S.R. (Lr.) Balashova ; (Lr. & Ur.) Benediktova ; (Lr.) Dedeev & Lapina ; (Ur.) Volgin ; (Ur.) Volgin (1) ; Czechoslovakia (Lr.) Zakowa ; Poland (Lr.) Zakowa (1) ; (Lr.) Gunia & Gorecka ; Germany Gräf ; Belgium (Lr.) Comil ; Eire (Lr.) George ; (Lr.) Caldwell ; U.S.A. (Lr.) Huffman & Starke ; (Pennsylvanian) Matthews ; Hoare ; Hoare & Burgess ; (Lr.) Sass ; (Lr. Penn.) Sadlier ; (Lr. Penn.-Ur.) Williams ; (Lr. Penn.) Weller ; South America (Ur.) Bürgl ; Australia (Lr.) Maxwell.

Permian.—U.S.S.R. Sluisareva ; Ustritskii ; (Lr.) Volgin & (1) ; (Ur.) Zavodorsky ; Canada (Arctic Regions) Harker in Harker & Thorsteinsson ; U.S.A. Coogan ; (Lr.) Stehli ; Japan (Mid.) Nakamura ; Australia Campbell.

Palaeozoic.—U.S.S.R. Gholubkov ; (Ur.) Miloradovich ; Sokolskaja ; U.S.A. Wilson & Majewski.

Triassic.—Yugoslavia Pantić ; Italy Desio, Rossi Rouchetti & Vigano ; Spain Virgili ; France (Ur.) Fuse ; Europe Ager.

Jurassic.—U.S.S.R., Makridin ; Poland (Ur.) Malinowska ; Yugoslavia Sudic ; (Lias) Italy, Pozzi ; Europe (General) Ager ; France (Lr.) Fuse ; (Mid.) Theobald ; England (Lr.) Hallam ; Arabia, Hudson & Chatton ; India Shani & Bhatnagar.

Cretaceous.—U.S.S.R., (Georgia) Popkhadze ; (Lr. N. Caucasus) Smirnova ; Italy (Lr.) Stramondo ; (Ur.) Germany Steinich ; England (Lr.) Owen ; (Ur. Chalk) Sahni ; Arabia, Hudson & Chatton ; Australia (Lr.) Elliott (1).

Tertiary.—U.S.S.R. (Georgia) Popkhadze ; Italy (Lr.) Dieni & Omenetto ; Portugal (Pliocene) Zbyszewski ; France (Eocene) Balavoine ; Britain (Eocene) Curry ; Arabia & Syria, Elliott ; U.S.A. (Pliocene) Hertlein & Grant ; (Pleistocene) Kanakoff & Emerson ; New Zealand, Allan.

Recent.—General Mano ; Manwell ; Beauchamp ; Howell ; Morton ; Britain Atkins ; Atkins (1), (2) ; Chuang ; Spain & Azores Odhnez ; Spain Haro ; New Zealand Percival.

III.—SYSTEMATIC INDEX

Note.—The classification used here is according to H. M. Muir-Wood, 1955, with minor later amendments. In view of the varied state of revision of the different groups and to avoid certain inconsistencies, no subdivision is attempted here below the level of superfamily.

Generic and family names are arranged in alphabetic order within each superfamily.

References to the "Titles" is by the name(s) of the Author(s).

†Denotes genus extinct.

CLASS INARTICULATA

Order ATREMATA

OBOLACEA

†*Dicellomus ambia* p. 819, figd., **Lochman & Hu** ;
? sp. ind. p. 5, figd., **Poulsen** (1).

†*Dinobolus* (?) *ambiguidensis* sp. nov., p. 799, figd., Lower Ordovician, French Sahara, **Legrand, Poueyto & Rousset** ; cf. *conradi* p. 242, figd., Middle Silurian, Canada, **Norford**.

†*Dysoristus lochmanae* p. 820, figd., **Lochman & Hu**.

†*Lingudella kayseri* p. 338, figd., **Kobayashi** (1) ; *modesta* p. 820, figd., **Lochman & Hu** ; *tomkolenensis* p. 226, figd., **Kobayashi** ; sp. p. 810, figd., **Lochman & Hu**.

†*Lingulepis shamojiformis* sp. nov. p. 338, *L.* (?) sp. p. 339, both figd. Ur. Cambrian, Korea., **Kobayashi** (1).

†*Obolus taianensis* p. 338, figd., **Kobayashi** (1).

LINGULACEA

Lingula arctica p. 49, figd., **Harker** ; *beansii* p. 29, Lower Lias, Dorset and Glamorgan, **Hallam** ; *mytiloides* p. 18, figd., **Griff.**

†*Lingulasma* (?) sp. p. 871, figd., **Pestana**.

Glottidia albida p. 18, Pleistocene, California, **Kanakoff & Emerson** ; *albida* p. 89, figd., **Hertlein & Grant**.

†*Glyptoglossella* (type species *Glyptoglossa cavellosa* Cooper, 1957) substituted for *Glyptoglossa* Cooper, 1956 preoc. **Brenske**, 1895, **Cooper**.

†*Pachyglossella* (type species *Pachyglossa dorsiconveva* Cooper, 1956) substituted for *Pachyglossa* preoc. **Hodgson**, 1843, **Cooper**.

Order NEOTREMATA

PATERINACEA

†*Dictyonina* sp. p. 820, figd., **Lochman & Hu**.

Order Kutorginiida proposed for Paterinacea, *Kutorginacea* p. 181, 182, **Sarycheva**, et al.

†*Micromitra modesta* p. 820, figd., **Lochman & Hu**.

SIPHONOTRETAZEA

†*Botsfordia paucigranulata* sp. nov. p. 8, figd., Lower Cambrian, West Africa, **Poulsen**.

Order Siphonotretida proposed for Obolellacea, *Siphonotretacea*, p. 180, **Sarycheva** et al.

ACROTRETAZEA

†*Acrothele sougyi, spinulosa* spp. nov. p. 9, figd., Lower Cambrian, West Africa, **Poulsen**.

†*Linnarssonella girtyi* p. 814, figd., **Lochman & Hu**.

DISCINACEA

Discinica holdeni p. 29, Lower Lias, Dorset and Glamorgan, **Hallam**.

†*Orcibuloidea* sp. p. 49, figd., **Harker**.

Pelagodiscus atlanticus p. 403, figd., Recent, N. Spain and Azores, **Odhner**.

CRANIACEA

†*Angarella* gen. nov. p. 486, type species : *A. jaworowskii* sp. nov. p. 488, Lower Silurian, Siberian Platform, U.S.S.R., **Asatkin**.

Crania anomala p. 35, Recent., **Rowell** ; *anomala* p. 9, figd., histology, **Chuang**.

Pholidopsidae fam. nov. for *Pholidops*, *Lingulapholis* p. 177, **Gorjansky** in **Sarycheva**, et al.

CLASS ARTICULATA

Suborder ORTHOIDEA

ORTHACEA

†*Altorthis* gen. nov. p. 288, type species *A. kinderlensis* sp. nov. p. 289, figd., Ordovician, U.S.S.R., **Andreeva**.

†*Apheoorthis orientalis* sp. nov. p. 227, *A.* sp. p. 228, both figd., Lower Ordovician, Korea, **Kobayashi**.

†*Billingssella* sp. p. 810, figd., cf. *B.* sp. p. 818, figd., **Lochman & Hu**.

†*Dolerorthis dushtonensis* p. 168, **Dean** ; sp. p. 293, figd., **Boucot**.

†*Eoorthis remnicha* p. 810, figd., **Lochman & Hu** ; (?) sp. indet. p. 227, figd., **Kobayashi**.

†*Ocnerorthis cooperi* p. 810, p. 815, figd., **Lochman & Hu**.

Order Orthida proposed for Orthacea, Rhipidomellacea, Enteletacea, Clitambonitacea p. 183, **Sarycheva** et al.

†*Otusia sandbergi* p. 810, figd., **Lochman & Hu**.

†*Ptychopleurella arthuri* sp. nov. p. 871, figd., **Pestana**.

Tuvaellidae fam. nov. for *Tuvaella* p. 190, **Alichova** in **Sarycheva**, et al.

Suborder DALMANELLOIDEA

DALMANELLACEA

†*Bancroftina typa*, cf. *robusta* p. 168, **Dean**.

†*Dalmanella horderleyensis, indica, leptata* p. 168, **Dean**.

†*Elsaella* nom. nov. for *Bekkerella* Rosenstein, 1943, p. 192, **Alichova** in **Sarycheva**, et al.

†*Enteletes carnicus* p. 31, *oechleri* p. 32 both figd., **Volgin** (1) ; cf. *pentameroides* p. 23, **Gholubkov**.

†*Heterorthis alternata* p. 168, **Dean**.

†*Isorthis arcuaria* p. 82, Silurian, U.S.A., **Amsden**.

†*Isorthis fornicateimcurvata* p. 296, figd., **Boucot** ; *orbicularis* p. 5, figd., **Boucot** (2).

†*Orthotichia ovata* p. 30, figd., **Volgin** (1).

†*Parmorthis brownsportensis* p. 78, Silurian, U.S.A.,
Ansden.

†*Pionodema* aff. *lunata* p. 298, figd., Boucot.

†*Platyorthis verneuili* p. 294, figd., Boucot.

†*Proschizophoria torifera* p. 299, figd., Boucot; P. sp. figd., pl. 68, Boucot (1).

†*Rhipidomelloides musculosa solaris* p. 46, figd., Boucot & Arndt.

†*Salopina* gen. nov. p. 3 type species: *Orthis lunata*, 1839, figd., Ur. Silurian, Boucot (2).

†*Soudleyella* cf. *avelinei* p. 167, Dean.

†*Schizophoria resupinata* p. 423, Parkinson; *resupinata* p. 147, figd., Dedeev & Lapina; *striatula* p. 707, Biernat.

†*Tropidoleptus* sp. figd. pl. 68, Boucot (1).

Suborder CLITAMBONITOIDEA

CLITAMBONITACEA

†*Pomatotrema* (?) sp. p. 228, Kobayashi.

Suborder SYNTROPHIOIDEA

SYNTROPHIACEA

Alimbellidae fam. nov. for *Alimbella*, *Medessia*, p. 292, Lr. Ordovician, U.S.S.R., Andreeva.

†*Alimbella* gen. nov. p. 292, type species: *A. armata* sp. nov. p. 293, figd., Lr. Ordovician, U.S.S.R., Andreeva.

†*Clarkella vulgaris* p. 228, figd., Kobayashi.

†*Medessia* gen. nov. p. 295, type species: *M. uralica* sp. nov. p. 296, figd., Lr. Ordovician, U.S.S.R., Andreeva.

†*Palaeostrophia orthia* p. 339, figd., Kobayashi (1).

Suborder PENTAMEROIDEA

PENTAMERACEA

Anastrophidae fam. nov. for *Anastrophia* p. 202, Sarycheva, et al.

Antirhynchonellidae fam. nov. for *Antirhynchonella*, p. 205, Nikiforova in Sarycheva, et al.

†*Biseptum* gen. nov. p. 39, type species: *B. rectocostatum* p. 40, figd., Eifelian, Urals, Khodalevich et al.

†*Conchidiella pseudobaschkirica* p. 28, aff. *pseudobaschkirica* p. 31, *pseudobaschkirica* var. *longicephala* var. nov. p. 32, *calvata* sp. nov. p. 33, *calvata* var. *large* p. 34, *degener* p. 35 vars. nov., *rossica* p. 36, *longiplutea* sp. nov. p. 37 *triangulicostata* p. 30, all figd., Eifelian, Urals, Khodalevich, et al.

†*Conchidium oehlerti*, figd. pl. 1., Sitter & Zwart.

Gamdaellidae fam. nov. p. 91 for *Gamdaella*, Lower Permian, U.S.S.R., Miloradovich.

†*Gamdaella* gen. nov. p. 92, type species *G. algae* sp. nov. figd., Lower Permian, U.S.S.R., Miloradovich.

†*Gypidula iwdelensis* p. 16, *menneri* p. 17, *moellwanzewi alfa forma* nov. p. 18, *totaensis* p. 20, *acutolobata* var. *uralotjanachanica* var. nov., p. 21, *osturalica* sp. nov. p. 22, *vaganica* p. 23, *tenuiplicata* p. 24, *weberi* p. 25, all figd., Eifelian, Urals, Khodalevich, et al.; *acutolobata*, p. 91, *acutolobata* var. *uralotjanachanica* p. 92, Lower Devonian, U.S.S.R., Khodalevich (1).

†*Gypidulella* gen. nov., type species: *G. pennatula* sp. nov. p. 26, figd., Eifelian, Urals, Khodalevich, et al.

†*Jolia* gen. nov. p. 56, type species: *J. multiplexa* sp. nov. p. 58, *scalaris* p. 60, *longisulcata* p. 61 spp. nov. Silurian, U.S.S.R., Sapel'nikov.

†*Kulumbella* gen. nov. p. 61, type species: *K. kulumbensis* sp. nov. p. 62, figd., *biconvexa* sp. nov. p. 64, figd., Silurian, U.S.S.R., Nikiforova.

†*Leviconchidiella* gen. nov. type species: *Sieberella* (?) *vaganica* Khodalevich 1951, p. 301, Middle Devonian, U.S.S.R., Ezhonmintskskaya (1).

Order Pentamerida proposed for *Porambonitaceae*, *Camerellaceae*, *Pentameraceae*, p. 197, Sarycheva, et al.

Suborder TRIPLESIOIDEA

TRIPLESIACEA

†*Streptis monilifera*, *monilifera altosinuata* p. 259, figd., Wright.

Suborder STROPHOMENOIDEA

PLECTAMBONITACEA

†*Aegiria aquila aquila* p. 399, *aquila* *praecursor* subsp. nov. p. 401, *descendens* sp. nov. p. 402, *quaesita* p. 403, all figd., Ordovician, Czechoslovakia, Havliček.

†*Benignites* gen. nov. p. 409, type species: *Strophomena primula* p. 410, Ordovician, Czechoslovakia, Havliček; (*Leptestiina*) subgen. nov. *pranili* sp. nov. p. 412, Ordovician, Czechoslovakia, Havliček.

†*Foliomena* gen. nov., type species: *Strophomena folium* Barrande, 1879, p. 413 figd., Ordovician, Czechoslovakia, Havliček.

†*Sowerbyella soudleyensis* p. 167, p. 168, *sericea* p. 168, Dean.

†*Kozlowskites* gen. nov. p. 406, type species: *Strophomena nuncia* Barrande, 1879, 407. Ordovician, Czechoslovakia, Havliček.

†*Sowerbyella tristis* p. 408, Havliček.

STROPHOMENACEA

†*Altaestrophia* gen. nov. p. 96, type species: *Leptodontella acuta* Khalin, 1948, figd., Devonian, U.S.S.R., Bublichenko.

†*Douvillina* (*Mesodouvillina*) *triculata* p. 301, figd.,

†*Douvillina* (?) *crickmayi* sp. nov. p. 212, figd., Ur. Devonian, Canada, Pedder.

†*Kjaerina* aff. *jonesi*, p. 167, *bipartita* p. 168, Dean.

†*Leptaena* "rhomboidalis" p. 49, figd., Boucot & Arndt; cf. "rhomboidalis" p. 300, figd., Boucot; sp. p. 148, figd., Dedeck & Lapina.

†*Leptostrophia* cf. *subarachnidea*, cf. *elatopanaria* p. 304, both figd., Boucot.

†*Nervostrophia borealis* p. 209, *maclareni* p. 210, spp. nov. figd., Ur. Devonian, Canada, Pöder.

Opikininae subfam. nov. for *Opikina*, *Opikinella*, *Macrocoelia*, *Platymena*, *Glyptomena*, † *Kirkina*, p. 211, Sokolskaja in Sarycheva et al.

†*Plicostropheodonta* gen. nov., type species: *Orthis murchisoni* Verneuil et Archiac, 1842, p. 214, figd., Devonian, U.S.S.R., Sokolskaja in Sarycheva, et al.

†*Proteoleptostrophia* cf. *blainvilliei* p. 48, figd., Boucot & Arndt.

†*Pseudoleptaena* gen. nov. p. 97, type species: *P. distorta* (Sowerby) figd., Lower Carboniferous, U.S.S.R., Miloradovich.

†*Rafinesquina expansa* p. 167, Dean.

†*Rhenostrophia* subgen. nov. p. 483, figd., type species: *Orthis subarachnidea* d'Archiac et De Verneuil, 1842. Lower Devonian, Nova Scotia, Boucot (1).

†*Shaleria rigida* p. 302, figd., Boucot; sp. p. 12, figd., Boucot (2).

ORTHOSETACEA

†*Derbyia crassa* p. 711, figd., Hoare & Burgess; cf. *grandis* p. 52, *D. sp.* p. 53, both figd., Harker.

Omboniinae subfam. nov. for *Ombonia*, *Geyerella*, *Orthotetes*, *Pseudoderbyia*, *Orthotella*, *Sicelia*, *Gemmalaria*, *Perigeyerella*, *Werria*, *Permorthotetes* p. 218, Sokolskaja in Sarycheva, et al.

†*Orthotetes regularis* p. 34, *expansus* p. 37, *hindii quadratus* p. 38, *cardiformis trigonus* p. 39, all figd., Volgin (1).

†*Meekella* aff. *irregularis* p. 39, figd., Volgin (1).

†*Schuchertella adoceta* sp. nov. p. 18, figd., Middle Devonian, Canada, Crickmay; *eu zona* p. 305, figd., Boucot; *fascifera* p. 318, figd., Gunia & Gorecka; *reticulata* p. 148, figd., Dedeck & Lapina; sp. p. 49, figd., Boucot & Arndt.

†*Schuchertella* sp. p. 13, figd., Boucot (2).

†*Streptorhynchus kempei* p. 50, *triangularis* p. 51 both figd., Harker.

Suborder PRODUCTOIDEA

PRODUCTACEA

†*Acanthia* *nupera* gen. nov. p. 158, figd., Muir-Wood & Cooper.

†*Acanthoplecta* gen. nov. p. 170, type species: *Producta mesoloba* J. Phillips, 1836, p. 171, figd., Lr. Carboniferous, Belgium, Muir-Wood & Cooper.

†*Agramatia agramati* p. 148, figd., Muir-Wood & Cooper.

†*Alexenia gratiodentalis* p. 92, cf. *reticulata* p. 95, both figd., Volgin (1); *reticulata* p. 233, figd., Muir-Wood & Cooper.

†*Alifera* gen. nov. p. 207, type species: *Productus expansus* de Koninck, 1842, figd., Lower Carboniferous, Europe, Belgium, Great Britain, Russia, Muir-Wood & Cooper; *konincki* nom. nov. for *Productus expansus* de Koninck, 1842, p. 208, *A. panderi* nom. nov. for *Productus minutus* Muir-Wood, 1928, p. 209, Muir-Wood & Cooper.

†*Anidanthus shastensis* sp. nov. p. 287, figd., Permian, U.S.A., Coogan; *springeurensis* p. 300, figd., Muir-Wood & Cooper.

†*Antiquatoria antiquatus* p. 270, figd., Muir-Wood & Cooper; *insculpta*, cf. *insculpta* p. 153, figd., Dedeck & Lapina.

†*Argentiproductus margaritaceus* p. 183, figd., Muir-Wood & Cooper.

†*Auloprotonia* gen. nov. p. 273, type species: *A. aulacophoria* sp. nov. p. 274, figd., Mississippian, U.S.A., Muir-Wood & Cooper.

†*Aulosteges wangenheimi* p. 96, figd., Muir-Wood & Cooper.

Aulostegidae fam. nov. p. 94, Muir-Wood & Cooper.

Aulosteginae subfam. nov. p. 95, for *Aulosteges*, *Taeniothaerus*, *Wyatkina*, Permian, Muir-Wood & Cooper.

†*Avonia krudoyensis* p. 45, *echidniformis* p. 47, aff. *pustulata* p. 49, all figd., Volgin (1); *youngiana* p. 185, figd., Muir-Wood & Cooper.

Avoniidae fam. nov. for *Mesoplica*, *Avonia*, *Argentiproductus*, *Productina*, *Plicatifera*, *Jakutopodus*, *Protoniella*, *Haydenella*, *Bispinoprodus*, p. 226, Sarycheva in Sarycheva, et al.

†*Bagrasia* gen. nov. type species: *Productus chonetiformis* Krestovnikov and Karpyachev, 1948, Ur. Devonian to Lr. Carboniferous, U.S.S.R. p. 231, Sarycheva in Sarycheva, et al.

†*Bathymyonia* gen. nov. p. 244, type species: *Productus nevadensis* Meek, 1877. Permian, Western U.S.A. p. 245, figd., Muir-Wood & Cooper.

†*Bilotina subiecta* p. 122, figd., Muir-Wood & Cooper.

†*Buxtonia subpunctata* p. 41, *mosquensis* p. 53, *kalivaensis* p. 55, figd., Volgin (1); *scabridus* p. 256, figd., Muir-Wood & Cooper.

Buxtoniidae fam. nov. p. 255, Lower Carboniferous—Permian, Muir-Wood & Cooper.

Buxtoniinae subfam. nov. p. 255, for *Buxtonia*, *Etheridgina*, *Fleabaria*, *Kochi productus*, *Labriproductus*, *Marginatia*, *Marginicinctus*, *Protoniella*, Lower Carboniferous—Permian, Muir-Wood & Cooper.

†*Calliprotonia* gen. nov. p. 248, type species: *O. renfrarum* sp. nov. p. 247, figd., Upper Pennsylvanian—Lower Permian, U.S.A. and central Peru, Muir-Wood & Cooper.

†*Cancrinella cancrinii* p. 302, figd., Muir-Wood & Cooper; *germanicus* p. 56, figd., Harker; *phosphatica* p. 290, figd., Coogan; *undata geniculata* p. 66, figd., Volgin (1).

†*Cardinocrania indica* p. 137, figd., Muir-Wood & Cooper.

†*Chaoiella grünewaldti* p. 276, figd., Muir-Wood & Cooper.

†*Chonetella nasuta* p. 220, figd., Muir-Wood & Cooper.

Chonetellidae fam. nov. for *Chonetella*, p. 226, Licharew in Sarycheva et al.

†*Chonetipustula carringtoniana* p. 357, figd., Zakowa; *plicata* p. 310, figd., Gunia & Górecka; *plicata* p. 159, figd., Muir-Wood & Cooper.

†*Chonopectus fischi* p. 156, figd., Muir-Wood & Cooper.

†*Chonosteges* gen. nov., type species: *Aulosteges magnicostatus* Girty, 1909, p. 113, Permian, Texas, Muir-Wood & Cooper.

†*Cinctifera* gen. nov., type species: *Productus medusa* de Koninck 1842, p. 165, figd., Lr. Carboniferous, Belgium, Muir-Wood & Cooper.

†*Compressoprodus* gen. nov., type species: *Productus compressus* Waagen, 1884, p. 231, Sarycheva in Sarycheva, et al.

†*Cocinarina* gen. nov., type species: *Richthofenia communis* Gemmellaro, 1894, Permian, Sicily, Muir-Wood & Cooper.

†*Costellaria* gen. nov., p. 123, type species: *C. costata* sp. nov. p. 124, figd., Lr. Permian, Texas, U.S.A., Muir-Wood & Cooper.

†*Costiferina* gen. nov., type species: *Productus indicus* Waagen, 1884, p. 277, figd., Permian, Salt Range, Himalayas, Muir-Wood & Cooper.

Costispiniferinae subfam. nov. p. 217, for *Costispinifera*, *Chonetella*, *Echinauris*, *Elliottella*, *Haydenella*, *Infatia*, *Liosotella*, *Rudinia*, Mississippian—Permian, Muir-Wood & Cooper.

†*Costispinifera* gen. nov. p. 217, type species: *C. texana* sp. nov. p. 218, figd., Permian, Texas, U.S.A., Muir-Wood & Cooper.

†*Craspedalia* gen. nov. p. 82, type species: *Orthothriz lamellosa* Geinitz 1848, figd., Upper Permian, Germany, Muir-Wood & Cooper.

†*Crossalosia* gen. nov. p. 75, type species: *Productus buchanianus* de Koninck, 1847, figd., Lower Carboniferous, Belgium, Muir-Wood & Cooper.

†*Ctenalosia* sp. nov. p. 92, figd., Muir-Wood & Cooper.

Ctenalosiinae subfam. nov. p. 91, for *Ctenalosia*, Middle Permian, Muir-Wood & Cooper.

†*Dasyalosia* gen. nov. p. 76, type species: *Spondylus goldfussi* Muenster, 1839, figd., Permian, Germany, Muir-Wood & Cooper.

†*Devonalosia* gen. nov. p. 83, type species: *D. wrightorum* sp. nov. p. 85, figd., Middle Devonian, Canada, Muir-Wood & Cooper.

†*Devonoprotodus* *walcotti* p. 177, figd., Muir-Wood & Cooper.

Devonoprotodinae subfam. nov. p. 177, for Devonoprotodus, Productellina, Middle Devonian—Early Carboniferous, Muir-Wood & Cooper.

†*Derbyella bureri* p. 131, figd., Muir-Wood & Cooper.

†*Desmoinesia* gen. nov. type species: *Productus muricatus* Norwood and Pratten, 1854, p. 226, *D. nana* p. 227, both figd., Pennsylvanian, Missouri, U.S.A., Hoare.

†*Diaphragmus elegans* p. 242, figd., Muir-Wood & Cooper.

†*Dictyoclostus articus* p. 282, *bassi elongatus* subsp. nov. p. 283, both figd., Permian, U.S.A., Coogan; *bathycolpos* p. 79, *donetsianus* p. 81 *neoinflatus* p. 85, *orientalis* p. 87, *latus* p. 89, *uralicus* p. 91 all figd., Volgin (1); *dinsti* p. 321, Gunia & Górecka; *neoinflatus* p. 55, figd., Harker; *paradoxus* p. 4, figd., Maxwell; *portlockianus* p. 712, *hermannus*, *gallienensis* p. 713, all figd., Hoare & Burgess; *semireticulatus* p. 269, figd., Muir-Wood & Cooper; *tiawanensis* sp. nov., p. 224, fig., Pennsylvanian, Missouri, U.S.A., Hoare; aff. *spiralis* p. 497, *sino-indicus* p. 499, aff. *gruenewaldti* p. 501, *taiyuanfuensis* var. *locyi* var. nov. p. 503, *inflatiformis* var. *expansus* p. 505, sp. A. p. 507, aff. sp. A. p. 508, *grabaui* sp. nov. p. 509, all figd., Middle Permian, Japan, Nakamura.

†*Echinaria* gen. nov. type species: *Productus semipunctatus* Shepard, 1838, p. 248, figd., Pennsylvanian, U.S.A., South Manchuria, Muir-Wood & Cooper.

†*Echinauris* gen. nov. p. 221, type species: *E. lateralis* sp. nov. p. 222, figd., Middle Permian, Texas, Muir-Wood & Cooper.

†*Echinoconchus komischanii* p. 59, *elongatus* p. 60, *postpunctatus* p. 62, Volgin (1); *punctatus* p. 244, figd., Muir-Wood & Cooper; ex. gr. *punctatus* p. 149, figd., Dedeev & Lapina.

†*Echinosteges* gen. nov. p. 101, type species: *Aulosteges tuberculatus* p. 102, figd., Middle Permian, Texas, U.S.A., Muir-Wood & Cooper.

†*Edriosteges* gen. nov., p. 103, type species: *E. multispinosus* sp. nov. p. 104 figd., Lower Permian, Texas, U.S.A., Muir-Wood & Cooper.

†*Elliottella transversalis* p. 224, figd., Muir-Wood & Cooper.

†*Eomarginifera* p. 200, type species: *Productus longispinus* J. Sowerby, 1814, figd., Lower Carboniferous—U. Carboniferous, Muir-Wood & Cooper.

†*Ericiaria* gen. nov. type species: *Productus newberryi* Hall, 1857, p. 172, figd., Mississippian, Ohio, Muir-Wood & Cooper.

†*Etheridgina complectens* p. 257, figd., Muir-Wood & Cooper.

†*Fimbriaria* gen. nov. type species: *Overtonia plummeri* R. H. King, 1938, figd., Late Pennsylvanian and Permian North and South America, Muir-Wood & Cooper.

†*Flexaria* gen. nov. p. 258, type species : *Productus arkansanus* Girty, 1910, p. 259, Mississippian, U.S.A., Muir-Wood & Cooper.

†*Fluctuaria* gen. nov. p. 303, type species : *Productus undatus* Defrance, 1826, p. 304, figd., Lower Carboniferous, Europe and Russia, Muir-Wood & Cooper.

†*Galeatella* gen. nov. p. 173, type species : *G. galeata* sp. nov. p. 174, figd., Ur. Devonian, New Mexico, Muir-Wood & Cooper.

†*Gemmellaria* Cossman, 1898 = *Gemmellaroiella* Mabut, 1937, Permian Sicily. Muir-Wood & Cooper.

†*Geniculifera* gen. nov. type species : *Avonia boonenensis* E. B. Branson, 1938, Mississippian, U.S.A., Muir-Wood & Cooper.

†*Gigantopproductus giganteus* p. 331, figd., Muir-Wood & Cooper ; *striato-sulcatus* var. *semiglobosa*, *latissima*, p. 320, figd., *latissimus* var. *priaca*, cf. *bisai* p. 321, *Gunia* & Górecka.

Gigantopproductidae fam. nov. for *Gigantopproductus* subfam. nov. for *Gigantopproductus*, *Semiplanus*, *Titanaria*, Lower Carboniferous, Muir-Wood & Cooper.

†*Girlesia superelegans* p. 106, figd., Muir-Wood & Cooper.

†*Globiella* gen. nov. p. 304, type species : *Productus hemisphaerium* Kutorga, 1844, p. 305, figd., Ur. Permian, Europe, Russia, Arctic, ? Ur. Permian, China, Armenia, India, Muir-Wood & Cooper.

†*Grandaurispina* gen. nov. p. 305, type species : *G. kingorum* sp. nov. p. 306, figd., Permian, Texas, Muir-Wood & Cooper.

†*Hamlingella goergesi* p. 161, figd., Muir-Wood & Cooper.

†*Haydenella kiangsiensis* p. 225, figd., Muir-Wood & Cooper.

†*Helaspis luma* p. 156, Muir-Wood & Cooper.

†*Heteralosia siocomi* p. 81, figd., Muir-Wood & Cooper.

Heteralosiinae subfam. nov. p. 80, for *Heteralosia*, *Craspedalosia*, *Devonalosia*, *Leptalosia*, *Liatlosia*, *Sphenalosia*, *Wyndhamia* (= *Branztonia*), *Truncalosia*, *Oligorachis*, Middle Devonian to Ur. Permian, Muir-Wood & Cooper.

†*Horridonia horrida* p. 293, figd., Lower to Ur. Permian, England, Europe, Arctic regions, Asia, ? Australia, Muir-Wood & Cooper ; *subhorrida* p. 291, figd., Coogan.

Horridoniidae fam. nov. for *Horridonia*, *Sowerbina*, ? *Pleurohorridonia* p. 234, Carboniferous to Permian, Sarycheva in Sarycheva, et al.

Horridoniinae subfam. nov. p. 292 for *Horridonia* (*Pleurohorridonia* syn., *Sowerbina* syn.), Permian, Muir-Wood & Cooper.

†*Hystriculina* gen. nov. p. 210, type species : *H. texana* sp. nov. p. 211, figd., Pennsylvanian and Lr. Permian, North and South America, Muir-Wood & Cooper.

†*Inflatia* gen. nov. p. 226, type species : *Productus inflatus* McCheesney, 1860, figd., Mississippian, U.S.A., Muir-Wood & Cooper.

†*Institella leonardensis* p. 118, figd., Muir-Wood & Cooper.

Institellinae subfam. nov. p. 117, for *Institella*, Permian, Muir-Wood & Cooper.

†*Institifera* gen. nov. p. 203, type species : *Productus tessellatus* de Koninck, 1847, figd., Lower Carboniferous (Visean), Belgium, England, Ireland, Muir-Wood & Cooper.

Institiferinae subfam. nov. p. 203, for *Institifera*, *Thomasesella*, Lower Carboniferous (Visean), Muir-Wood & Cooper.

†*Institina* gen. nov. type species : *Productus marginalis* de Koninck, 1847, p. 164, figd., Lr. Carboniferous, Belgium, Muir-Wood & Cooper.

Institinidae fam. nov. for *Institina*, *Cinctifera*, *Rugicostella*, p. 164, Muir-Wood & Cooper.

†*Juresania juresanensis* p. 267, figd., Muir-Wood & Cooper.

Juresaniinae subfam. nov. p. 266, for *Juresania*, *Ramavectus*, Pennsylvanian and Permian, Muir-Wood & Cooper.

†*Kansuella kansuensis* p. 337, figd., Muir-Wood & Cooper.

Kansuelliinae subfam. nov. p. 336, for *Kansuella*, Lower Carboniferous (Visean), Muir-Wood & Cooper.

†*Kochiproductus freboldi* p. 59, figd., Harker ; *orrectus* p. 260, figd., Muir-Wood & Cooper.

†*Kozlowskia capacii* p. 213, figd., Muir-Wood & Cooper.

†*Krotovia spinulosa* p. 188, figd., Muir-Wood & Cooper.

†*Kutorginella genuina* p. 99, *daastarensis* p. 101, both figd., Volgin (1) ; *mosquensis* p. 234, figd., Muir-Wood & Cooper.

†*Laminatia* gen. nov. p. 189, type species : *Productella laminata* Kindle, 1909, p. 190, figd., Ur. Devonian, U.S.A., Muir-Wood & Cooper.

†*Leioproductus wortheni* p. 262, figd., Muir-Wood & Cooper.

†*Leioproductus coloradoensis* var. *plicatus*, p. 168, figd., Muir-Wood & Cooper.

Leioproductidae fam. nov. p. 167, for *Leioproductus* subfam. nov. p. 168, for *Leioproductus* (= *Bispinopproductus*), *Acanthoplecta*, *Ericiatia*, *Galeatella*, *Mesoplica*, *Planoproductus* Ur. Devonian—Mississippian, Muir-Wood & Cooper.

†*Leptalosia scintilla* p. 85, figd., Muir-Wood & Cooper.

†*Levipustula levigata* p. 191, figd., Muir-Wood & Cooper.

†*Levitusia* gen. nov., type species: *Productus humerosus* J. Sowerby, 1822, p. 295, figd., Lower Carboniferous, Europe & Asia, Muir-Wood & Cooper.

Levitusiinae subfam. nov. p. 295, for *Levitusia*, Lower Carboniferous, Muir-Wood & Cooper.

†*Limbella wolfcampensis* p. 107, figd., Muir-Wood & Cooper.

†*Linopunctatus cora* p. 297, figd., Muir-Wood & Cooper; *nasutus* p. 290, Coogan; *neffedevi* p. 68, *lineatus* p. 70, *simensis* p. 72, *cora-lineatus* p. 74, *ovalis* p. 77, all figd., Volgin (1); *planiventralis*, *echinatus* p. 228, *distortus* p. 229, spp. nov. all figd., Pennsylvanian, Missouri, U.S.A., Hoare; *prattiensis* p. 712, figd., Hoare & Burgess; *teniustratus* var. *transuralicus* p. 150, figd., Dedevev & Lapina.

†*Lialosia* gen. nov. type species: *Strophalosia kimmerleyensis* Prendergast, 1943, p. 86, figd., Permian, Western Australia, Muir-Wood & Cooper.

†*Liosotella cooperi* sp. nov. p. 285, figd., Permian, U.S.A., Coogan; *rugosa* p. 228, figd., Muir-Wood & Cooper.

†*Loczyella nankingensis* p. 143, Muir-Wood & Cooper.

†*Marginatia* gen. nov. p. 262, type species: *Productus ferngrenensis* Weller, 1909, Mississippian, U.S.A., Muir-Wood & Cooper.

†*Marginicinctus marginicinctus* p. 264, figd., Muir-Wood & Cooper.

†*Marginifera schellwieni* p. 102, *pusilla* p. 104, aff. *deoraleis* p. 105, all figd., Volgin (1); *schartymensis* p. 154, figd., Dedevev & Lapina; *typica* p. 206, figd., Muir-Wood & Cooper.

†*Marginirugus magnus* p. 308, figd., Muir-Wood & Cooper.

†*Megousia* gen. nov. p. 309, type species: *M. auriculata* sp. nov. p. 310, figd., Permian, Texas and Mexico, Muir-Wood & Cooper.

†*Mesoplica praelonga* p. 175, figd., Muir-Wood & Cooper.

†*Monticulifera* gen. nov. type species: *Productus intermedius* p. 327, figd., Lower Permian, China, Ur. Permian, Indochina, Muir-Wood & Cooper.

Monticuliferinae subfam. nov. for *Monticulifera* p. 327, Permian, Muir-Wood & Cooper.

†*Muirwoodia californica* sp. nov. p. 287, figd., Permian, U.S.A., Coogan; *mammatus* p. 323, figd., Muir-Wood & Cooper; *mammatus* p. 58, figd., Harker; (?) *aurita* p. 108, figd., Volgin (1).

†*Neoproboscidella*? Author. Mentioned but not described by E. A. Ivanova (1949, p. 47). Probably near *Kutorginella*, p. 338, Muir-Wood & Cooper.

†*Neopunctatus* nom. nud. Grabau & Tien. Listed by Lee (1939, p. 487). Description never published p. 338, Muir-Wood & Cooper.

†*Neopunctatus* Nikitin (1900, p. 385) nomen nudum, p. 338, Muir-Wood & Cooper.

†*Nudauris diabloensis* p. 229, figd., Muir-Wood & Cooper.

†*Oligorachis oligorachis* p. 91, Muir-Wood & Cooper.

†*Orbinaria* gen. nov. type species: *Productella pyxidata* p. 149, figd., Mississippian, Missouri, U.S.A., Muir-Wood & Cooper.

†*Ovatia* gen. nov. p. 311, type species: *O. elongata* sp. nov. p. 312, figd., Mississippian, U.S.A. Ur. Carboniferous, Russia, Muir-Wood & Cooper.

†*Overtonia fimbriata* p. 183, figd., Muir-Wood & Cooper.

Overtoniidae fam. nov. p. 183, Upper Devonian—Permian, Muir-Wood & Cooper.

Overtoniinae subfam. nov. p. 183, for *Overtonia*, *Avonia*, *Fimbriaria*, *Geniculifera*, *Krotovia*, *Laminatia*, *Levipustula*, *Rhytiophora*, *Rugauris*, *Semicostella*, *Sentosia*, *Setigerites*, *Stegacanthia*, *Stipulina*, *Semi-productus*, Muir-Wood & Cooper.

†*Paramarginifera clarkei* p. 215, figd., Muir-Wood & Cooper.

†*Paucispinifera* gen. nov. p. 319, type species: *P. auriculata* sp. nov. p. 320, figd., Permian, Texas, Muir-Wood & Cooper.

Paucispiniferinae subfam. nov. p. 319 for *Paucispinifera*, *Muirwoodia*, *Yakowlevia*, Permian, Muir-Wood & Cooper.

†*Penicularia* gen. nov. p. 278, type species: *P. mckeei* sp. nov. p. 280, Permian, Texas, Muir-Wood & Cooper.

†*Planispina conida* p. 94, figd., Muir-Wood & Cooper.

†*Planopunctatus hillsboroensis* p. 177, figd., Muir-Wood & Cooper.

†*Pleurohorridonia scoresbyensis* p. 294, Muir-Wood & Cooper.

†*Plicatifera* cf. *mesoloba*, *plicatilis* p. 319, both figd., *Gunia* & *Gorecka*; *menneri* sp. nov. p. 143, figd., Ur. Devonian, U.S.S.R., *Sidaiachenko*; *plicatilis* p. 202, figd., Muir-Wood & Cooper.

Plicatiferinae subfam. nov. p. 201, for *Plicatifera*, Lower Carboniferous, Muir-Wood & Cooper.

†*Praewaagenoconcha oreliana* p. 151, figd., Muir-Wood & Cooper.

†*Probolonia posteroreticulata* p. 238, figd., Muir-Wood & Cooper.

Proboloniinae subfam. nov. p. 237, for *Probolonia*, Permian, Muir-Wood & Cooper.

†*Proboscidella proboscidea* p. 326, figd., Muir-Wood & Cooper.

Proboscidellinae subfam. nov. p. 325, for *Proboscidella*, Lower Carboniferous, Muir-Wood & Cooper.

†*Productina sampsoni* p. 181, figd., Muir-Wood & Cooper.

Productininae subfam. nov. p. 181 for *Productina*, *Argentiproductus* Lr. Carboniferous (Visean) and Mississippian, Muir-Wood & Cooper.

†*Productella subaculeata* p. 146, figd., Muir-Wood & Cooper.

†*Productellana bifaria* p. 151, figd., Muir-Wood & Cooper.

†*Productellina fremlingtonensis* p. 180, figd., Muir-Wood & Cooper.

†*Productus productus* p. 239, figd., Muir-Wood & Cooper.

†*Productus (Dictyoclostus)* aff. *americanus* p. 22, figd., Graf.

†*Prorichthofenia permiana* p. 140, figd., Muir-Wood & Cooper; (?) cf. *teguiferoides* p. 24, figd., Gholubkov.

Prorichthofeniinae subfam. nov. p. 139, for *Prorichthofenia*, Permian, Muir-Wood & Cooper.

†*Protoniella beedei* p. 265, figd., Muir-Wood & Cooper.

†*Pseudomarginifera ussuricus* p. 314, figd., Muir-Wood & Cooper.

†*Pugilis pugilis* p. 282, figd., Muir-Wood & Cooper.

†*Pulchratia* gen. nov. p. 249, type species: *Productus symmetricus* McChesney, 1860, figd., Pennsylvanian, U.S.A., Muir-Wood & Cooper.

†*Pustula pustulosa* p. 251, figd., Muir-Wood & Cooper.

†*Quadratia* gen. nov. p. 161, type species: *Productus hirsutiforme* Walcott, 1884, Mississippian, Arkansas, Oklahoma, Texas, Nevada, U.S.A., Muir-Wood & Cooper.

†*Ramavectus diablocensis* p. 268, figd., Muir-Wood & Cooper.

†*Retaria* gen. nov. p. 230, type species: *R. umbrinata* sp. nov. p. 231, figd., Permian, Texas, Muir-Wood & Cooper.

Retarininae subfam. nov. p. 230, for *Retaria*, *Alezenia*, *Kutorginella*, *Rugivestis*, *Tubaria*, Carboniferous—Permian, Muir-Wood & Cooper.

†*Reticulatia* gen. nov., type species: *Productus huecoensis* R. E. King, 1931, p. 284, figd., Pennsylvania—Permian, U.S.A., Muir-Wood & Cooper.

†*Rhamnaria* gen. nov. p. 119, type species: *R. kingorum* sp. nov. p. 120 figd., Permian, Texas, U.S.A., Muir-Wood & Cooper.

Rhammarinae subfam. nov. p. 119, for *Rhamnaria*, *Bilotina*, Permian, Muir-Wood & Cooper.

†*Rhytiophora* gen. nov., type species: *Productus blairi* Miller, 1891, p. 192, Mississippian, U.S.A., Muir-Wood & Cooper.

†*Richthofenia lawrenciana* p. 136, figd., Muir-Wood & Cooper.

†*Rudinia* gen. nov. p. 229, type species: *Productus muricatus* Norwood & Pratten, 1855, figd., Pennsylvanian, U.S.A., Muir-Wood & Cooper.—*Desmoinesia* Hoare, 1960.

†*Rugatia* gen. nov. p. 285, type species: *Productus paraindicus* McKee, 1938, p. 236, figd., Permian, Texas, and Arizona, U.S.A., Muir-Wood & Cooper.

†*Rugauris* gen. nov. p. 193, type species: *R. paucispina* sp. nov. p. 184, Mississippian, U.S.A., Muir-Wood & Cooper.

†*Rugicostella* gen. nov. type species: *Productus nystianus* de Koninck, 1842, p. 166, figd., Lower Carboniferous, Belgium, Muir-Wood & Cooper.

†*Rugivestis* gen. nov. p. 235, type species: *Proboscidella*? *carinata* Muir-Wood & Cooper, 1957, figd., Permian, U.S.A. and Russia, Muir-Wood & Cooper.

†*Scacchinella variabilis* p. 129, figd., Muir-Wood & Cooper.

†*Semicostella* gen. nov. p. 195, type species: *Avonia oklahomensis* Snider, 1915, figd., Mississippian, Oklahoma, U.S.A., Muir-Wood & Cooper.

†*Semiplanus mikhailevensis* p. 152, figd., Dedeev & Lapina; *semiplanus* p. 333, figd., Muir-Wood & Cooper.

Semiplaniidae fam. nov. for *Bagrasia*, *Semiplanus*, p. 231, Sarycheva in Sarycheva et al.

†*Semiproductus minax* p. 201, Muir-Wood & Cooper.

†*Sentosia* gen. nov. p. 196, type species: *Krotovia precursor* Stainbrook, 1947, figd., Upper Devonian, New Mexico, U.S.A., Muir-Wood & Cooper.

†*Septarinia* gen. nov. p. 251, type species: *Productus leuchtbergensis* de Koninck, 1847, p. 252, figd., Lower Carboniferous, Belgium, Muir-Wood & Cooper.

†*Seigerites setiger* p. 197, figd., Muir-Wood & Cooper.

†*Sinoproducetella hemispherica* p. 152, figd., Muir-Wood & Cooper.

†*Sinuatella sinuata* p. 125, figd., Muir-Wood & Cooper.

Sinuatellidae fam. nov. p. 124, for *Sinuatella*, Lower to Upper Carboniferous, Muir-Wood & Cooper.

†*Soverbina timanica* p. 294, figd., Muir-Wood & Cooper.

†*Sphenoslesia* gen. nov. p. 87, type species: *S. amedleyi* sp. nov. p. 88, figd., Permian, Wyoming, U.S.A., Muir-Wood & Cooper.

†*Sphenosteges* gen. nov. type species: *Aulosteges hispidus* Girty, 1920, p. 108, figd., Permian, Utah, U.S.A., Muir-Wood & Cooper.

†*Spinifrons quadratus* p. 287, figd., Muir-Wood & Cooper.

†*Spinomarginifera kueichowensis* p. 216, figd., Muir-Wood & Cooper.

†*Spinulicosta spinulicosta* p. 153, figd., Muir-Wood & Cooper; *stainbrookii* sp. nov. p. 18, figd., Middle Devonian, Canada, Crickmay.

†*Spirisodium primarium* p. 109, figd., Muir-Wood & Cooper.

†*Spyridiophora distincta* p. 144, figd., Muir-Wood & Cooper.

Spyridiophoridae fam. nov. p. 144, for *Spyridiophora*, Pennsylvanian and Permian, Muir-Wood & Cooper.

†*Squamaria* gen. nov. p. 287, type species : *S. moorei* sp. nov. p. 289, figd., Permian, Texas, Muir-Wood & Cooper.

†*Steinhagella membranacea* p. 164, Muir-Wood & Cooper.

†*Stegacanthia* gen. nov. p. 198, type species : *Stegacanthia bousheri* sp. nov. p. 199, figd., Mississippian, U.S.A., Muir-Wood & Cooper.

†*Stepanoviella* gen. nov. p. 336, type species : *S. paracurvata* sp. nov. p. 337, Upper Permian, U.S.S.R., Zavodovsky.

†*Stipulina* gen. nov. p. 200, type species : *Productus dehaysianus* de Koninck, 1842, figd., Lower Carboniferous (Visean), Belgium and England, Muir-Wood & Cooper.

†*Striatifera* ex gr. *magna* p. 151, figd., Dedeev & Lapina ; ex. gr. *striata* p. 24, figd., Gholubkov ; *striata* p. 329, figd., Muir-Wood & Cooper.

Striatiferinae subfam. nov. for *Striatifera* p. 328, Lower Carboniferous and Permian, Muir-Wood & Cooper.

Strophalosiacea superfam. nov. p. 71, for Strophalosiidae, Teguliferinidae, Aulostegididae, Sinuatellidae, Tschernyschewiidae, Scacchinellidae, Richthofeniidae, Spyridiophoridae, Lr. Devonian—Permian, Muir-Wood & Cooper.

†*Strophalosiella coraeformis* p. 110, figd., Muir-Wood & Cooper.

†*Strophalosiella tibetica* p. 115, figd., Muir-Wood & Cooper.

†*Strophoprotectus hystricula* p. 155, figd., Muir-Wood & Cooper.

†*Taeniothaerus subquadratus* p. 98, figd., Muir-Wood & Cooper.

†*Tectarea robinsoni* p. 143, figd., Permian, U.S.S.R., Muir-Wood & Cooper.

†*Teguliferina deformis* p. 93, figd., Muir-Wood & Cooper.

Teguliferinidae fam. nov. p. 92, for *Teguliferina*, *Planispirina*, Upper Carboniferous to Middle Permian, Muir-Wood & Cooper.

Teguliferidae fam. nov. p. 236, for *Teguliferina*, *Proteguliferina*, *Planispirina*, Carboniferous to Permian, Licharew in Sarycheva et al.

†*Terrakea brachythaerus* p. 317, figd., Muir-Wood & Cooper.

Thomasella margaritacea p. 319, figd., Guina & Cooper ; *wrighti* p. 205, figd., Muir-Wood & Cooper.

†*Titanaria* gen. nov. p. 334, type species : *T. costellata* sp. nov. p. 335, figd., Mississippian, U.S.A., Muir-Wood & Cooper.

†*Tolmatchoffia robustus* p. 290, figd., Muir-Wood & Cooper.

†*Truncalosia gibbosa* p. 91, Muir-Wood & Cooper.

†*Tschernyschewia typica* p. 127, figd., Muir-Wood & Cooper.

Tschernyschewiidae fam. nov. p. 126, for *Tschernyschewia*, Permian, Muir-Wood & Cooper.

†*Tubaria* gen. nov. p. 236, type species : *Productus genuinus* Kutzorga, 1844, figd., Lr. Permian, Russia, Muir-Wood & Cooper.

†*Tyloplecta* gen. nov. p. 290, type species : *Productus scabriculus* mut. *nankingensis* Frech, 1911, p. 291, figd., Permian, China and Europe, Muir-Wood & Cooper.

†*Undaria* gen. nov. p. 317, type species : *U. manzensis* sp. nov. p. 318, figd., Lower Carboniferous (Visean), U.K. and Belgium, Muir-Wood & Cooper.

†*Urushtenia mexicaniformis* p. 97, figd., Volgin (1).

†*Urushtenia pseudomedusa* p. 116, figd., Muir-Wood & Cooper.

†*Waagenoconcha humboldti* p. 253, figd., Muir-Wood & Cooper ; *payeri* ? p. 61, *W. cf. irginaeformis* p. 62, Parker.

Waagenoconchinae subfam. nov. p. 252, for *Waagenoconcha*, Upper Pennsylvanian—Ur. Permian, Muir-Wood & Cooper.

†*Whidbournella caperata* p. 163, figd., Muir-Wood & Cooper.

†*Wyatkina gigas* p. 101, figd., Muir-Wood & Cooper.

†*Wyndhamia dalwoodensis* p. 89, figd., Muir-Wood & Cooper.

†*Xenosteges* gen. nov. p. 111, type species *X. adherens* p. 112, figd., Permian, Texas, U.S.A., Muir-Wood & Cooper.

†*Yakovlevia kaluzinensis* p. 324, figd., Muir-Wood & Cooper.

NOMINA DUBIA

†*Hunanella* nom. nud. from Lr. Carboniferous, eastern Hunan, China, Lee (1939, p. 468), p. 338, Muir-Wood & Cooper.

INCERTAE SEDIS

†*Pectenoprotectus proprius* p. 337, Muir-Wood & Cooper.

Suborder CHONETOIDEA

CHONETACEA

†*Chonetes granulifer* p. 42, figd., Volgin (1) ; *omaliana* p. 307, figd., Boucot.

†“*Chonetes*” cf. *nectus* p. 49, figd., Boucot & Arndt.

†*Chonetes* (*Chonetes*) *dalmanianus* p. 149, figd., Dedeev & Lapina.

†*Chonetes (Paeckelmannia) capitolinus* p. 53, figd., Harker.

†*Chonetina* cf. *timanicus* p. 55, figd., Harker.

†*Chonetinella* cf. *sinuosa* p. 291, figd., Coogan.

†*Chonetoides tenerima* sp. nov. p. 404, *radiatula* p. 405, Ordovician, Czechoslovakia, Havliček.

†*Daviesiella* cf. *comoides* p. 318, Gunia & Górecka.

Daviesiellidae fam. nov. for *Daviesiella*, *Airtonia*, p. 223, Sokolskaja in Sarycheva, et al.

†*Eodevonaria* cf. *arcuata* p. 49, figd., Boucot & Arndt.

†*Eolissochonetes* gen. nov., type species: *Chonetes laevis* Keyes, 1888, p. 220, figd., *bilobatus* sp. nov. p. 221, figd., Pennsylvanian, Missouri, U.S.A., Hoare.

†*Mesolobus striatus* sp. nov. p. 222, figd., Pennsylvanian, Missouri, U.S.A., Hoare; *striatus* Name originally proposed by Weller & McGehee 1933, Stehlík.

Paeckelmanniinae subfam. nov. for *Paeckelmannia*, *Lissochonetes*, *Chonetina*, *Quadrochonetes*, *Anoplipsis*, *Anoplia*, *Semenewia*, *Notanoplia*, *Dyros*, p. 222, Sokolskaja in Sarycheva, et al.

†*Plicochoonetes waldenburgianus* p. 357, figd., Zakowa.

Plicochoonetinae subfam. nov. for *Plicochoonetes*, *Longispina*, *Waagenites*, p. 222, Sokolskaja in Sarycheva, et al.

DICTYONELLOIDEA

EICHWALDIIDAE

Dictyonella reticulata, *corallifera*, *concinna*, *gibbosa*, *subgibbosa* p. 31, Amsden (1).

INCERTAE SEDIS

†*Isogramma paotechowensis*, *millepunctata* p. 41, both figd., Volgin (1).

Suborder RHYNCHONELLOIDEA

RHYNCHONELLACEA

†*Acanthothiris* = correct spelling for *Acanthothyris*, p. 157, Ager.

†*Acanthothyris spinosa* p. 168, figd., Šudić.

†*Allorhynchus* ? *permianus* sp. nov. p. 74, figd., Permian (Wordian), U.S.A., Stehlík.

Amissopecten gen. nov. see Septalariidae fam. nov.

†*Austriellula* correct name for *Austriella* Bittner (1890), *Jacobella* Patte (1926), *Austriellina* Schuchert and Lo Veno (1929), p. 157, Ager.

†*Bicornes* Quenstedt, type species *Terebratula livonica* von Buch = Palaeozoic form from Germany not Mesozoic, p. 161, Ager.

†*Calcirhynchia calcaria* p. 29, Lower Lias, Dorset and Glamorgan, Hallam.

†*Camarotoechia* sp. 167, Dean; *daleidensis*, figd. pl. 1, Sitter & Zwart; *nympha* var. *emaciata* p. 42, *nympha* var. *uralica* p. 43, *nympha* var. *pseudolivonica* p. 44, *strajeskiana* p. 45, all figd., Khodalevich, et al.; ex gr. *pleurodon* ? p. 154, figd., Dedeev & Lapina.

†“*Camarotoechia*” *aequicostata* p. 308, *sinuosa* p. 309, both figd., Boucot.

†*Caryorhynchus hippocastanea* sp. nov. p. 13, figd., Middle Devonian, Canada, Crickmay.

†*Costellirostra* sp. p. 47, figd., Boucot & Arndt.

Cyclothyrinidae subfam. nov. p. 82, Mesozoic, Makridin.

†*Decoropugnax* gen. nov., type species: *Terebratula berenice* Barrande, 1847, p. 244, Silurian, Czechoslovakia, Havliček (1).

†*Fascicosta* gen. nov., type species: *Rhynchonella longaeava* Girty p. 71, figd., Permian (Wordian-Capitanian), U.S.A., Stehlík.

†*Halorella amphitoma* (Bronn) = type species of *Halorella* Bittner p. 158, Ager.

†*Halorellidea* gen. nov., type species *Halorella rectifrons* Bittner, 1890, p. 159, Alpine Trias, Austria, Ager.

Hebetoechiidae fam. nov. for †*Lanceomyonia* gen. nov., type species *Terebratula tarda* Barrande, 1847, p. 243, Silurian, Czechoslovakia, Havliček (1).

†*Hircinisa* gen. nov., type species: *Atrypa hircina* Barrande, 1879, p. 241, Silurian, Czechoslovakia, Havliček (1).

†*Hypothyridina* *alata* p. 49, *alata* var. *fainecostata* var. nov. p. 50, both figd., Eifelian, Urals, Khodalevich, et al.

†*Isjuminella* gen. nov. = *Isjuminella* 1960, p. 85, type species: *Rhynchonella decorata* Buch, 1830-31, Lusitanian, U.S.S.R., Makridin.

†*Ivanoviella* gen. nov. p. 83, type species: *Rhynchonella alemanica* Rollier, 1917, figd., Lower Callovian, U.S.S.R., Makridin.

†*Lacunosella cracoviensis* p. 405, figd., *trilobataiformis* p. 404, Malinowska.

†*Lamellaerhynchia caseyi* p. 252, *larwoodi* p. 253 spp. nov. figd. Ir. Cretaceous, Ur. Aptian, England, Owen.

†*Latonotoechia* gen. nov., type species: *Terebratula latona* Barrande, 1847, p. 244, Lower Devonian, Czechoslovakia, Havliček (1).

†*Linguopugnoides* gen. nov. type species: *Rhynchonella* *nympha* *carens* Barrande, 1879, p. 242, Silurian, Czechoslovakia, Havliček (1).

Monatotoechia gen. nov. see Septalariidae fam. nov.

†*Mosquella* gen. nov. p. 86, type species: *Rhynchonella* *oxyoptyla* Fischer de Waldheim, 1843, Jurassio, U.S.S.R., Makridin.

†*Norella* *bittneri* sp. nov. p. 160, Alpine Lias, Austria, Ager.

†*Orbicularia parkinsoni* sp. nov. p. 250, figd. Lr. Cretaceous, Ur. Albian, Cambridge. [= "Rhynchonella" *sulcata* (Parkinson) of authors], Owen.

†*Paraphorhynchus medialis* p. 322, *striatus* p. 327, *girtyi* 331, *casteri* sp. nov. p. 334, all figd., Lr. Carboniferous, U.S.A., Sloss.

†*Peregrinella multicarinata* p. 707, Biernat.

†*Phoenicitechia* gen. nov., type species: *Rhynchonella phoenix* Barrande, 1847, p. 242, Lower Devonian, Czechoslovakia, Havliček (1).

†*Phragmophora schnuri* p. 706, Biernat.

†*Piarorhynchia juvensis* p. 29, Lower Lias, Dorset and Glamorgan, Hallam.

†*Praecyclothys* gen. nov. p. 87, type species: *Rhynchonella moeschi* *donetzi* Makridin, 1952, Lusitanian, U.S.S.R., Makridin.

Pseudopugnaxinae subfam. nov. p. 248 for *Pseudopugnax*, ? *Donella*, ? *Monticarella*, Licharew in Sarycheva, et al.

†*Pugnax pugnus* p. 406, *pseudopugnus* p. 412, *acuminatus* p. 414, Parkinson; aff. *voroni* p. 48, figd., Khodalevich, et al.

†*Pugnoides bisulcatus* p. 292, figd., Coogan.

†*Rhynchonella* cf. *cartieri* p. 458, *latifrons* figd., *plicatissima* var. *rectimarginata* p. 459, *variabilis* p. 460, figd., Lias, Italy., Pössi; *loxiae*—correct spelling for type species of *Rhynchonella* Fischer previously recorded as *R. loxia*, p. 160, Ager; *quadruplicata* p. 168, figd., Šudík; *refractifrons* Bittner, 1890—type species of *Norella* Bittner, 1880, p. 159, Alpine Trias, Austria, Ager.

Rhynchonellinae subfam. nov. p. 88, Triassio—Recent, Makridin.

Rhynchotetraidae fam. nov. p. 249 for *Goniophoria*, *Yanischewskylaea*, *Rhynchotetra*, *Axiodeaneia*, Licharew in Sarycheva, et al.

†*Septularia* (?) *transuralica* p. 51, (?) *transeuralica* var. *micula* var. nov. p. 52 both figd., Eifelian, Urals, Khodalevich, et al.

Septulariidae fam. nov. for †*Amissopecten* gen. nov., type species *Terebratula velox* Barrande, 1847, and †*Monodotoechia* gen. nov., type species *Rhynchonella monas* both p. 243, Devonian, Czechoslovakia, Havliček (1).

†*Septaliphoria arduensis* p. 88, Makridin.

†*Septocamera chatyrkensis* sp. nov. p. 25, figd., Gholubkov.

†*Streptaria arabica* sp. nov. p. 152, figd., Eocene, Arabia, Elliott.

Tegularhynchia nigricans p. 439, Recent, New Zealand, Percival.

†*Terebratuloides triplicata* p. 109, figd., Volgin (1).

Tetracameridae fam. nov. p. 249 for *Rotaia*, *Septocamera*, *Tetracamera*, *Nantanella*, Licharew in Sarycheva, et al.

†*Uncinunellina ferganica* sp. nov. p. 115, figd., Ur. Carboniferous—Lr. Permian, U.S.S.R., Volgin; *ferganica* p. 109, figd., Volgin (1).

†*Uncinulus orbignyanus*, *pilus* figd. pl. 1, Sitter & Zwart.

Wellerellidae fam. nov. for *Wellerellina* subfam. nov. p. 247, for *Wellerella*, *Denticuliphoria*, *Euacinella*, *Robinsonella*, *Leiorhynchidea*, *Hyborhynchella*, *Fascicosta*, Licharew in Sarycheva, et al.

†*Wilsonella princeps* p. 46, *knjaspenensis* p. 47, figd., Khodalevich, et al.

STENOCISMATACEA

†*Stenoscisma* cf. *kochi* s. *plicatum* p. 62, both figd., Harker; *latissima* p. 111, *nucula triangula* p. 113, *tschernyschevi* p. 114, all figd., Volgin (1); *nucula triangula* subsp. nov. p. 117, Lower Permian, *S. tschernyschevi* sp. nov. p. 118 Ur. Carboniferous to Lr. Permian, both figured, Volgin; *venusta* p. 293, figd., Coogan.

RHYNCHOPORACEA

†*Rhynchopora* cf. *nikitini* p. 28, Gholubkov; cf. *nikitini* p. 63, figd., Harker; *taylori* p. 293, figd., Coogan.

Suborder ATRYPOIDEA

ATRYPACEA

†*Atrypa aperanta* sp. nov., *arctica* p. 15, both figd., Middle Devonian, Canada, Crickmay; *devoniana* var. *matutinalis*, *devoniana* var. *descrescens* p. 53, *spinosaeformis*, *flabellata* p. 54, *scaberbra* p. 55 all figd., Khodalevich, et al.; *gedinniana* p. 310, figd., Boucot; *lazutkini* sp. nov. p. 67, figd., Silurian, U.S.S.R., Alekseeva (1); "reticularis" p. 48, figd., Boucot & Arndt.

†*Carinatina arimaspa* p. 60, *arimaspa* var. *syrmatica* var. nov. p. 61, *arimaspa* var. *minor* p. 62, *signifera* var. *localis* p. 63, *paradoxa* p. 64, all, figd., Eifelian, Urals, Khodalevich.

†*Coelospira* sp. p. 11, figd., Boucot (2).

†*Dentatrypa* gen. nov. p. 57, type species: *Attrypa kolymensis* Nalivkin, 1935 p. 58, *kolymensis* var. *intermedia* p. 59 all figd., Eifelian, Urals, Khodalevich, et al.

†*Plectatrypa* (?) *carpulenta* sp. nov. p. 65, figd., Eifelian, Urals, Khodalevich, et al.

†*Punctatrypa fossa* sp. nov. p. 56, figd., Eifelian, Urals, Khodalevich, et al.

Punctatrypinae subfam. nov. p. 262 for *Punctatrypa*, *Attrypinella*, Rzonsnickaja in Sarycheva, et al.

†*Spinatrypa dysmorphostrota* sp. nov. p. 13, figd., *coriacea* sp. nov. p. 14, figd., Middle Devonian, Canada, Crickmay.

†*Spirigerina marginaliformis* sp. nov. p. 65, figd., Silurian, U.S.S.R., Alekseeva (2).

Vagraria gen. nov., type species: *Atrypa kolympensis* Nalivkin, 1936, p. 598, figd., Devonian, Urals, U.S.S.R., Alekseeva.

Suborder SPIRIFEROIDEA

SPIRIFERACEA

†*Ambocelia urei* p. 118, *parva* p. 118, *unionensis* p. 120, figd., Balashova; *urei* p. 357, Zakowa.

†*Brachyspirifer* cf. *perimele* p. 48, figd., Boucot & Arndt.

†*Brachythyrina carinata* p. 120, *grandis* p. 122, aff. *shansiensis* p. 125, *quadriradiatus* p. 126, all figd., Volgin (1).

†*Brachythyris peculiaris* p. 104, *peculiaris* var. *latiangularis* var. nov., *suborbicularis* p. 105, *suborbicularis* var. *tenuicostata* p. 106, *tenuiplicatus* sp. nov. p. 107, *eximus* p. 108, all figd., Lower Carboniferous, U.S.S.R., Balashova; cf. *suborbicularis* p. 158, figd., Dedeov & Lapina; ex. gr. *ovalis*, *quadriradiatus* p. 26, both figd., Gholubkov; *ovalis* p. 406, Parkinson; (?) *talicensis* sp. nov. p. 67, figd., Eifelian, Urals, Khodalevich, et al.

†*Choristites gusanicus* sp. nov. p. 119, figd., Ur. Carboniferous, U.S.S.R., Volgin; *fritschii ferganicus* p. 128, *pavlovi* p. 130, *pavlovi taiyuensis* p. 133, (?) *vogelensis* p. 135, *gusanicus* p. 136 all figd., Volgin (1).

†*Crurithyris* cf. *guadalupensis* p. 296, figd., Coogan.

†*Delthyris dumontianus* p. 315, figd., Boucot.

†*Eomartiniopsis* ? *tocherepeti* p. 117, figd., Balashova.

†*Eospirifer karmenovi* var. *instabilis* var. nov. p. 66, figd., Eifelian, Urals, Khodalevich, et al.

†*Euryspirifer* cf. *atlanticus* p. 48 figd., Boucot & Arndt.

†*Homevalia pelicanensis* sp. nov. p. 1119, figd., Permian, Australia, Campbell.

†*Howellella mercuri* p. 313, figd., Boucot; sp. p. 8, figd., Boucot (2).

†*Ingelarella plana* p. 1112, *plica* p. 114, *ingelarensis* p. 1115, *magna* p. 1117, *mantuanensis* p. 1118, spp. nov. all figd., *havilensis* Isbell MS. p. 1120, figd., Permian, Australia, Campbell.

†*Ilmenia waganovi* sp. nov. p. 68, figd., Eifelian, Urals, Khodalevich, et al.

†*Licharewia stuckenbergi* p. 45, *regulata* p. 51, *grewingki* p. 55, *schrenckii* p. 58, *latiareata* p. 61, all figd., Slusareva; *stuckenbergi* p. 45, figd., Slusareva.

†*Martinia karawanica* sp. nov. p. 121, figd., Ur. Carboniferous, U.S.S.R., Volgin; *karawanica pusilla* p. 8, *semiconveza* p. 140, *incerta* p. 141, all figd., Volgin (1); *raguschenensis*, *glabra*, p. 159, figd., Dedeov & Lapina.

†*Martinia* (*Martiniella*?) *rhomboidalis* p. 116, figd., Balashova.

†*Martinia* (*Pseudomartina*) *uralica* p. 27, figd., Gholubkov.

†*Mentzelia ampla* p. 63, *microglossa* p. 64, *mentzelii* var. *dinarica*, *palaeotypus* p. 66, all figd., Pantic.

†*Neophericodothyris rostrata* p. 142, figd., Volgin (1).

†*Neospirifer cameratus* p. 714, figd., Hoare & Burgess; *grunewaldianus* p. 157, figd., Dedeov & Lapina; cf. *texanus* p. 294, figd., Coogan.

†*Notospirifer minutus* sp. nov. N. sp. p. 1121, figd., Permian, Australia, Campbell.

†*Nuguschella* gen. nov. p. 408, type species: *N. polita* sp. nov. p. 408, Middle Devonian, Southern Urals, Tjazheva.

†*Permospirifer keyserlingi* p. 67, *kudikovi* sp. nov. p. 71, both figd., Permian, U.S.S.R., Slusareva.

†*Phricodothyris perplexa* ? p. 714, figd., Hoare & Burgess.

†*Prospirifer typa* var. *tellebangensis* p. 8, figd., Lower Carboniferous, Australia, Maxwell.

†*Pterospirifer* cf. *alatus* p. 68, *P.* ? sp. A, both figd., Harker.

†*Reticularia* (*Phricodothyris*) *reticulata* p. 108, figd., Balashova.

†*Reticularia* (*Squamularia*) *cooperensis* p. 109, (*S?*) *lesnikovae* sp. nov. p. 111, figd., Lr. Carboniferous, U.S.S.R., Balashova.

†*Spirifer acutisimilis* p. 321, figd., Gunia & Górecka; *dolgenensis* p. 114, *telegatus* p. 117, both figd., Volgin (1); *grimesi* p. 51, figd., Early Mississippian, Oklahoma, Huffman & Stark; *occidius* nom. nov. for *Spirifer occidentalis* (Girty, 1927). Lr. Pennsylvanian, U.S.A., Sadick; *opimus* p. 713, figd., Hoare & Burgess; *osborni* sp. nov. p. 65, *S. striato-paradoxus* p. 67, both figd., Permian, Canada, Harker; *verneuili*, *berberine* figd., Permian, Canada, Harker; *verneuili*, *berberinensis*, *bouchardi*, *cultrijugatus*, *rojas*, *pellico* all figd. pl. 1, Sitter & Zwart; (*Spirifer*) *platynotus* p. 85, *tornacensis* p. 86, *ventricosus*, *pentagonus pentagonus* var. *curtoclauda* p. 91, *ussiensis*, *plicatilis* p. 93, *greceri*, *planatus* p. 94, *subrotundus* p. 95, *rostellatus* p. 96, *attenuatus* p. 97 (*Spirifer*) *suavis* p. 100, *cinctus* p. 101, *djanganensis* p. 102, all figd., Balashova; *triangularis* p. 154, *sibilei* sp. nov. p. 155, *S.* sp. p. 157, all figd., Lr. Carboniferous, U.S.S.R., Dedeov & Lapina.

†*Spirifer* ? cf. *bischofi* fig. pl. 68, Boucot (1).

†*Spirifer* (*Lamellispirifer*) *tylothyriformis* var. *multistriata* p. 84, *roemerianus* p. 85, figd., Balashova.

†*Spirifer* (*Paulonia*) *ranovensis* p. 83, figd., Balashova.

†*Spiriferella asiatica* sp. nov. p. 120, figd., Ur. Carboniferous, U.S.S.R., Volgin; *asiatica* p. 137, figd., Volgin (1); aff. *polaris* p. 294, figd., Coogan; *saranae* sens. lat. p. 71, *S. keilhavii* sens. lat. p. 72, figd., Harker.

Spinocyrtinae subfam. nov. p. 267 for *Tannaeuspirifer*, *Spinocyrtia*, *Mucrospirifer*, *Brevispirifer*, *Eosyringothyrida*, *Mauispirifer*, ? *Dimegelaasma*, Ivanova in Sarycheva, et al.

†*Squamularia asiatica* p. 64, figd., Harker.

†*Tomiopsis* gen. nov. p. 160, type species: *Brachythyris kumpani* Janischewsky, 1935, figd., Lower Visean—Namurian, Benediktova.

†*Tannuspirifer* gen. nov. type species: *Spirifer pedaschenkoi* Tchernychev, 1937, p. 267, figd., Silurian, U.S.S.R., Ivanova in Sarycheva, et al.

†*Urella* gen. nov. p. 402, type species: *Urella asiatica* sp. nov. p. 403, Middle Devonian, U.S.S.R., Rakhonitskaya.

†*Warrenella timetea* p. 16, *labrecquei* p. 17, spp. nov. both figd., Middle Devonian, Canada, Crickmay.

†? *Ziganella* gen. nov. type species: *Z. ziganensis* in coll. Nalivkin p. 280, figd., Lr. Carboniferous, U.S.S.R., Nalivkin in Sarycheva, et al.

PUNCTOSPIRACEA

†*Callispirina* ? *laxa* p. 296, figd., Coogan.

†*Cyrtina lapidea* sp. nov. p. 214, Ur. Devonian, Canada, Pedder; *utrimquesulcata* p. 316, figd., Boucot; ? sp. p. 9, figd., Boucot (2).

†*Punctospirifer* *multicostatus* p. 322, Gunia & Górecka; *partitus* p. 114, figd., Balashova;

†*Spiriferellina baypullicens* sp. nov. p. 7, figd., Lower Carboniferous, Tournaisian, Australia, Maxwell.

†*Spiriferina hirsuta* p. 67, *avarica* p. 68, *tommasii*, *mentzelii* p. 69, *mentzelii* var. *sinuosa* p. 70, all figd., Pantie; *pinguis*, *walcotti* p. 29, Lower Lias, Dorest and Glamorgan, Hallam.

†*Syringothyria hannibalensis* p. 112, *serenae* p. 113, figd., Balashova; *angulata* p. 350, *randalli* p. 355, both figd., Lr. Carboniferous, U.S.A., Sass.

ATHYRACEA

Athyris ambigua p. 361, figd., Zakowa; *dedeovi* sp. nov. p. 161, figd., Lapina in Dedeov & Lapina; *royesi* p. 322, Gunia & Górecka.

†*Anathyria ezquerrai* figd. pl. 1., Sitter & Zwart.

†*Cleiothyridina* cf. *subexpansa* p. 73, figd., Harker.

†*Composita* cf. *grandis* p. 296, Coogan; *tetralobata* sp. nov. p. 229, figd., Pennsylvanian, Missouri, U.S.A., Hoare; *trinuclea* p. 160, figd., Dedeov & Lapina; sp. p. 714, Hoare & Burgess.

†*Homeospira galumontensis* p. 317, figd., Boucot.

†*Hustedia mormoni* p. 144, figd., Volgin (1).

†*Merista pinguiivicula* sp. nov. p. 73, figd., Eifelian, Urals, Khodalevich, et al.

†*Meristella* (?) *rostellata* sp. nov. p. 70, *tschernyschevi* var. *perfetta* var. nov. p. 71 both figd., Eifelian, Urals, Khodalevich, et al.; ? sp. p. 311, figd., Boucot.

†*Protathyria* ? *straeleni* p. 312, figd., Boucot; sp. p. 10, figd., Boucot (2).

†*Trigeria adrieni* pl. 1, figd., Sitter & Zwart.

†*Tetractinella trigonella* p. 60, figd., Pantie.

Suborder TEREBRATULOIDEA

TEREBRATULACEA

†*Amphigenia* cf. *parea* p. 49, fig., Boucot & Arndt.

†*Balanoconcha australis* sp. nov. p. 5, figd. (serial section p. 6), Lower Carboniferous, Tournaisian, Australia, Maxwell.

†*Biarea* gen. nov. p. 75, type species: *B. sinuata* sp. nov. p. 76, figd., Eifelian, Urals, Khodalevich, et al.

†*Carneithyris gracilis* p. 16, *carnea* p. 17, figd., Sahni.

†*Chatwinothyris subcardinalis* Spicule pattern observed in moulds inside flint nodules, Steinich; *subcardinalis* p. 18, figd., Sahni.

†*Coenothyris vulgaris* p. 71, figd., Pantie.

†*Concinnithyris subundata* p. 4, *C. ? sp. indet.* p. 5, *albensis* p. 7, *albensis* var. *latifrons* p. 8, *albensis* var. *minor*, aff. *albensis* p. 9, *protobesa* p. 10, all figd., Sahni.

†*Cryptonella* (?) *assueta* p. 74, *schegulitanica* p. 75 spp. nov. figd., Eifelian, Urals, Khodalevich, et al.

†*Dielaema hastata* p. 427, Parkinson; cf. *plica* p. 74, figd., Harker; *pulgonica* sp. nov. p. 122, figd., Ur. Carboniferous, U.S.S.R., Volgin; *pulgonica*, *plica* p. 146, both figd., Volgin (1); *woehrmannianum* p. 305, figd., Trias, Italy, Desio, Rossi Ronchetli & Vigano.

†*Enantiosphen librovitschi* p. 50, figd., vodorezovi sp. nov. p. 51, figd., Middle Devonian, U.S.S.R., Rozman.

†*Geranocephalus inopinus* p. 882, Crickmay (1).

†*Gibbithyris grandis*, *grandis* var. *nana* p. 11, *media*, *ellipsoidalis* p. 12, *ellipsoidalis* var. *quidhamptonensis* var. nov., *gibba* p. 13, *subrotunda* p. 14, *semiglobosa* p. 14, all figd., Ur. Chalk, U.K., Sahni.

†*Jaisalmeria taylori* p. 423, *depressa* p. 424, *ovalis* p. 425, *ovalis* var. *cuneata*, *kitchini*, *inflata* p. 427, Sahni & Bhatnagar.

Labaidae fam. nov. p. 293, for *Labaia*, *Pseudodielasma*, ? *Oligothyria*, Lr. Carboniferous—Permian, Licharew in Sarycheva et al.

†*Meganteris* sp. figd. pl. 68., Boucot (1).

†*Mutationella barroisi* p. 318, figd., Boucot.

†*Neoliothyria obesa* p. 18, figd., Sahni.

†*Notothyris nucleolus* p. 148, figd., Volgin (1).

Notothyriinae subfam. nov. p. 288 for *Notothyris*, Permian, Caucasus, U.S.S.R., Licharew in Sarycheva et al.

†*Ornathyridis sulcifera* p. 19, figd., Sahni.

†*Podrella* sp. p. 320, figd., Boucot.

†*Postepithyridis* gen. nov. type species *Terebratula cincta* Cotta, 1857, p. 294, figd., Ur. Oxfordian—Lr. Kimmeridgian, U.S.S.R., Makridin in Sarycheva, et al.

†*Prionothyris* sp. p. 49, figd., Boucot & Arndt.

"*Rensselaeria elongata*" p. 74, figd., Amsden & Huffman.

†*Rouillieria* gen. nov. type species: *Terebratula michalkovii* Fahrenkohl, 1885-56, Ur. Jurassic—Lr. Valanginian, Makridin in Sarycheva, et al.

†*Stringocephalus glaphyrus, sapiens* p. 882, *chasmognathus* p. 885, spp. nov., *axius* p. 887 all figd., Middle Devonian, Canada, Crickmay (1).

†*Terebratula ampulla* p. 70, Zbyzzewski; *bukowskii, kielii* p. 61, both figd., Pantić; *globata*, p. 168, *T. cf. trilineata* p. 169, *ventricosa* p. 169, *perovalis, maxillata* p. 170, all figd., Sučić.

"*Terebratula*" *pumilo*—larval swimming form of *Stringocephalus* from the Middle Devonian, West Germany, Schmidt.

†*Terebratula* (? *Concinnithyris*) *rowei* sp. nov. p. 5 figd., Ur. Chalk, U.K., Sahni.

†*Terebratula* (*Sphaeroidothyris*) *lenthayensis* p. 171, figd., Sučić.

Terebratulina squamulosa p. 296, Eocene, English Channel, U.K., Curry.

Terebratulina (*Eucalathis*) *moreletti* Eocene, English Channel, U.K., Curry.

†*Uralella* gen. nov., type species: *Terebratula strogonofii* d'Orbigny, 1845, p. 295, figd., Ur. Jurassic, Southern Urals, Eastern Siberia and Arctic, Makridin in Sarycheva, et al.

Suborder TEREBRATELLOIDEA

TEREBRATELLACEA

Argyrotheca cordata p. 461, Recent, English Channel, Atkins (2); *decemcostata* p. 296, Eocene, English Channel, U.K., Curry; *zenobiae* sp. nov. p. 153, figd., Miocene, Syria, Elliott.

†*Australiarcula* gen. nov., type species *A. artesiana* sp. nov. p. 26, figd., Lower Albian, S. Australia, Elliott (1).

†*Belothyris* gen. nov. p. 117, type species: *Belothyris plana* sp. nov. p. 118, *regularis* p. 118, *convexa* p. 119 spp. nov. all figd., Lower Cretaceous, North Caucasus, U.S.S.R., Smirnova.

Belothyriinae subfam. nov. p. 115, for *Belothyris*, Lr. Cretaceous, North Caucasus, U.S.S.R., Smirnova.

Dallina septigera p. 91, figd., Atkins (1).

Falox gen. nov., type species: *F. dalliniformis* sp. nov. p. 72, figd., Recent, Western Approaches, Atkins.

Frenulina sanguinolenta p. 171, Recent, Japan, Mano.

Laqueus californianus p. 96, *vancouverensis diegensis* p. 97, Hertlein & Grant.

Megathyris detruncata p. 463, Recent, Atkins (2).

Megerlia truncata p. 154, figd., Pliocene, Syria, Elliott.

Mühlfeldia truncata p. 612, figd., Dieni & Omenetto.

Terebratalia arnoldi p. 92, *hemphilli* p. 93, *occidentalis* p. 94 all figd., Hertlein & Grant; *transversa* p. 18, Pleistocene, California, Kanakoff & Emerson.

†*Trigonosemus pulchellus*, Growth stages observed, Steinich.

†*Waldheimia angustaeformis* p. 62, Pantić.

†*Zeilleria* cf. *humeralis* p. 405, Malinowska; *perforata* p. 29, Lower Lias, Dorset and Glamorgan, Hallam.

The following Orders were proposed in the Russian Treatise, ОЧНОВЫ ПАЧЕОНТОЛОГИИ ОСНОВЫ PALEONTOLOGII published in Moscow, 1960.

INARTICULATA

RUSTELLIDA for Rustellacea.

LINGULIDA for Obolacea, Lingulacea, Trimerellacea.

CRANIIDA for Craniacea.

ACROTRETIDA for Acrotretacea, Discinacea.

SIPHONOTRETIDA for Obolellacea, Siphonotretacea.

KUTORGINIDA for Paterinacea (Dictyoninaceae), Kutorginaceae.

ARTICULATA

ORTHIDA for Orthacea, Rhipidomellacea (Dalmannellacea), Enteleletacea, Clitambonitacea.

PENTAMERIDA for Porambonitacea, Camerellacea, Pentameraceae.

STROPHOMENIDA for Plectambonitacea, Strophomenacea, Stropheodontacea, Orthotetacea.

PRODUCTIDA for Chonetacea, Productacea, Lyttoniacea.

RHYNCHONELLIDA for Rhynchonellacea, Rhynchoporacea.

ATRYPIDA for Cyclospiracea, Atrypacea, Coelospiacea, Dayiacea.

SPIRIFERIDA for Spiriferacea, Delthyriacea, Spiriferinacea, Athyracea.

TEREBRATULIDA for Terebratulacea, Terebratellacea, Thecidacea.

